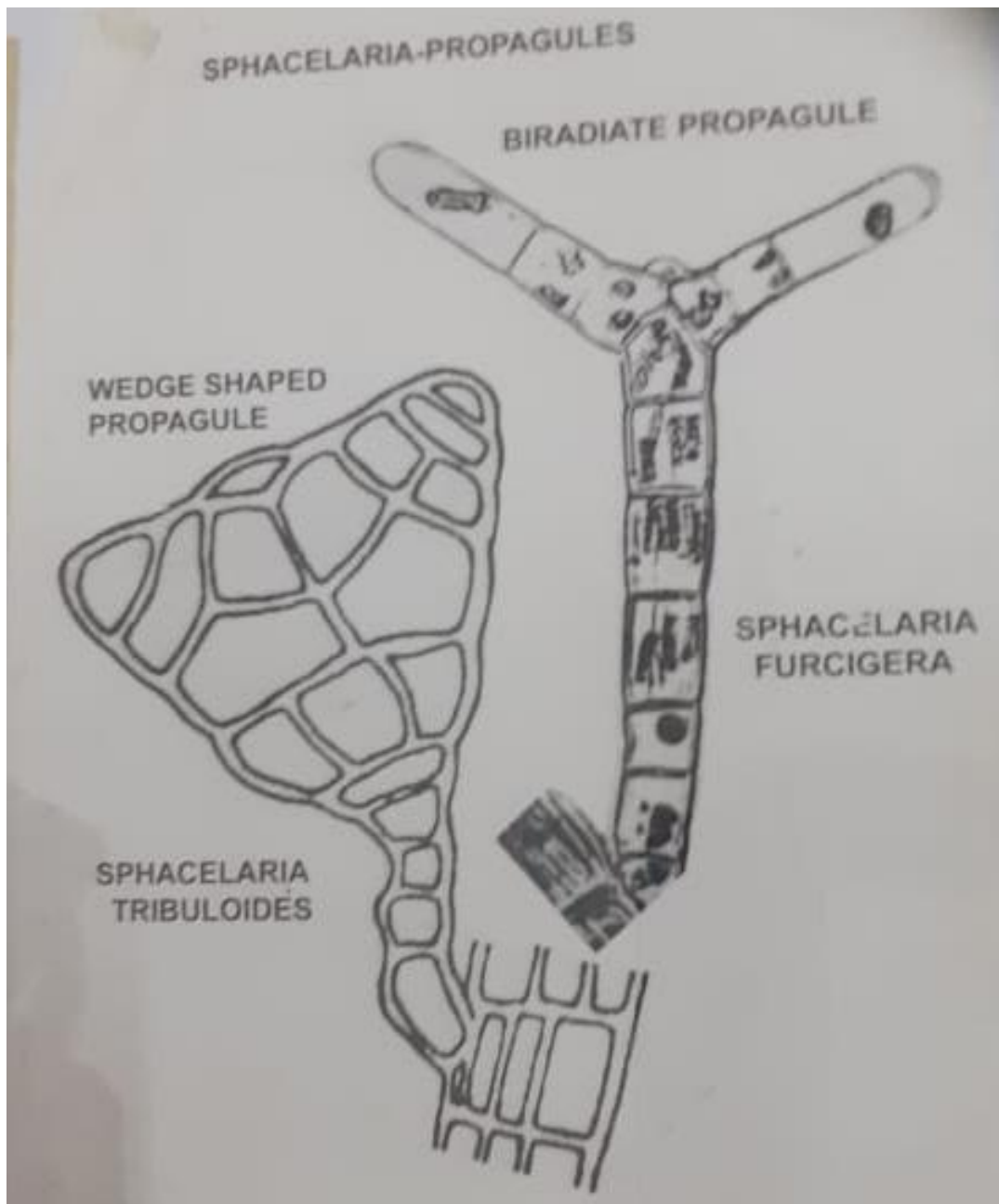
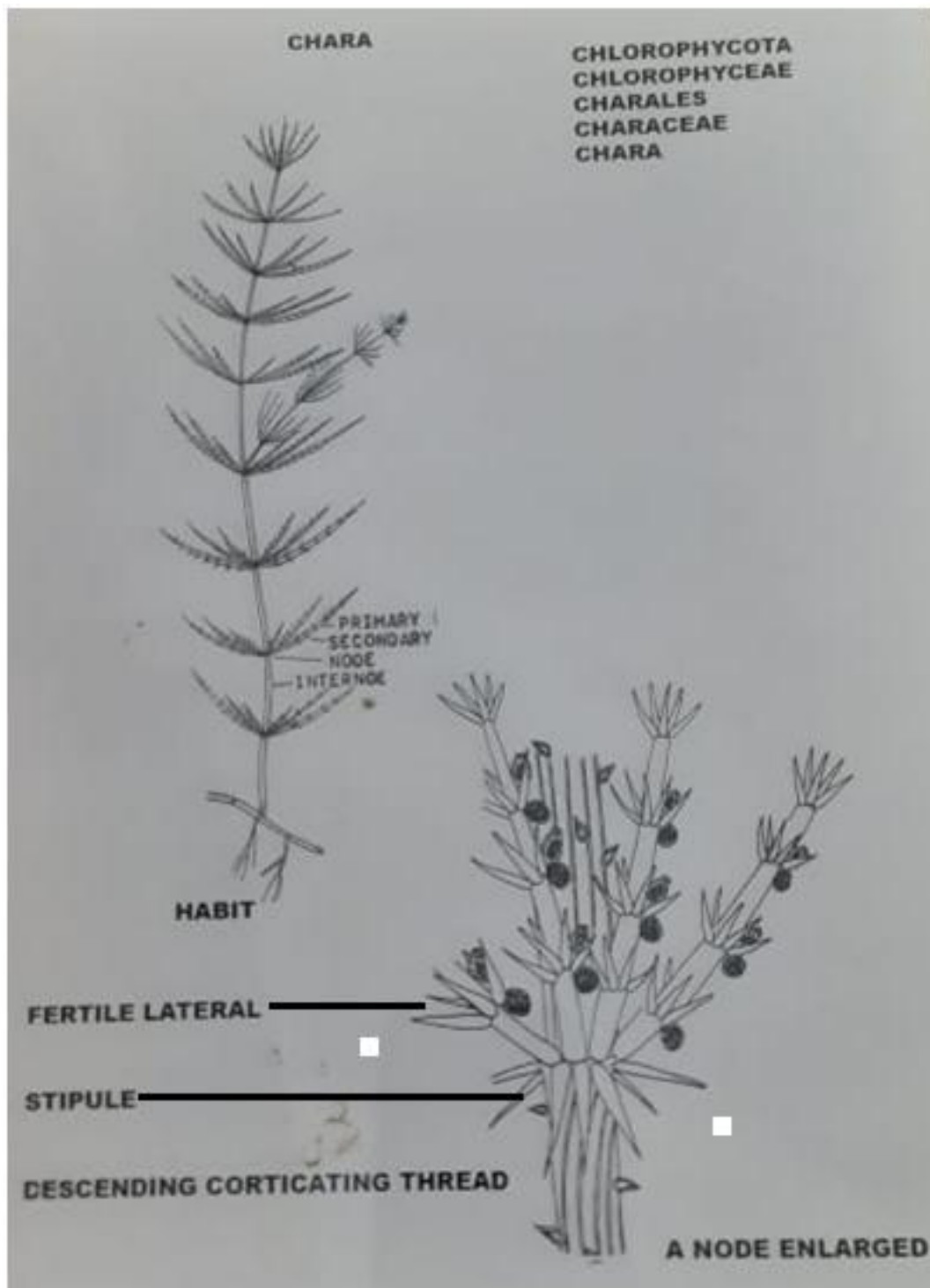


Sphacelaria – Propagules



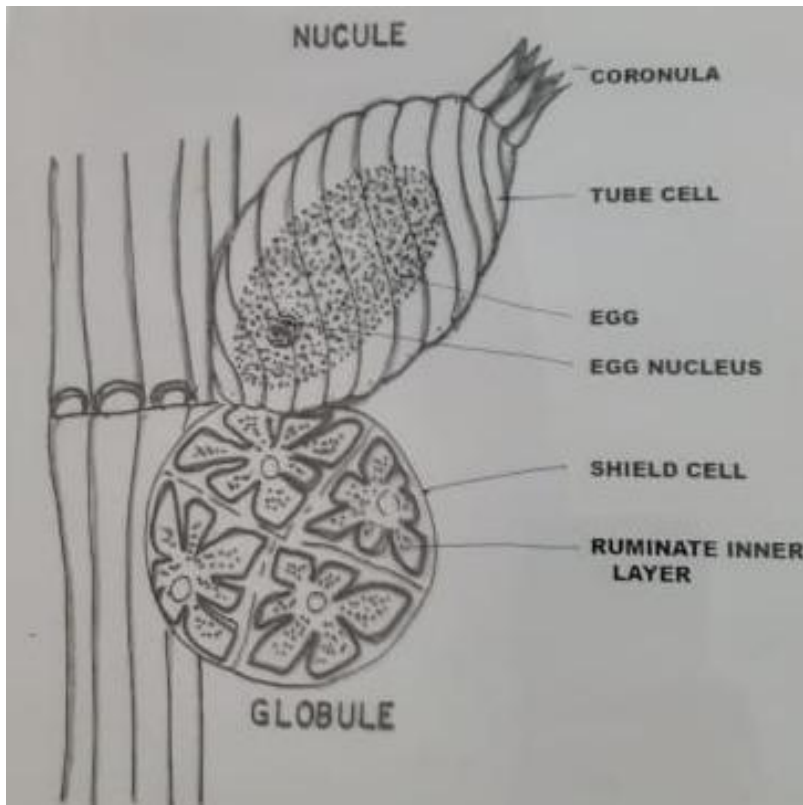
The spotter kept here is a propagule of filaments of *Sphacelaria*. Species of *Sphacelaria* reproduce propagules as a means of vegetative reproduction. Propagules are formed from the branches of main axis. These are bi-radiate, tri-radiate or wedge shaped in structure. Triradiate propagules are produced in *Sphacelaria furcigera* and wedge shaped propagules are formed in *Sphacelaria tribuloides*. These are liberated at maturity the distal cells of the arms of propagule functions as apical cell of future filaments of *Sphacelaria*. Similar propagules such as stellate propagules and hook shaped propagules are formed in red algae such as *Hypnea valentiae* and *Hypnea musiformis* respectively. Propagules are also formed in *Hildenbrandia rivularis* and *Polysiphonia* sp.

Chara Sp.



Chara Habit and a node enlarged

Chara Sexual Reproductive Structures– Nucule and Globule

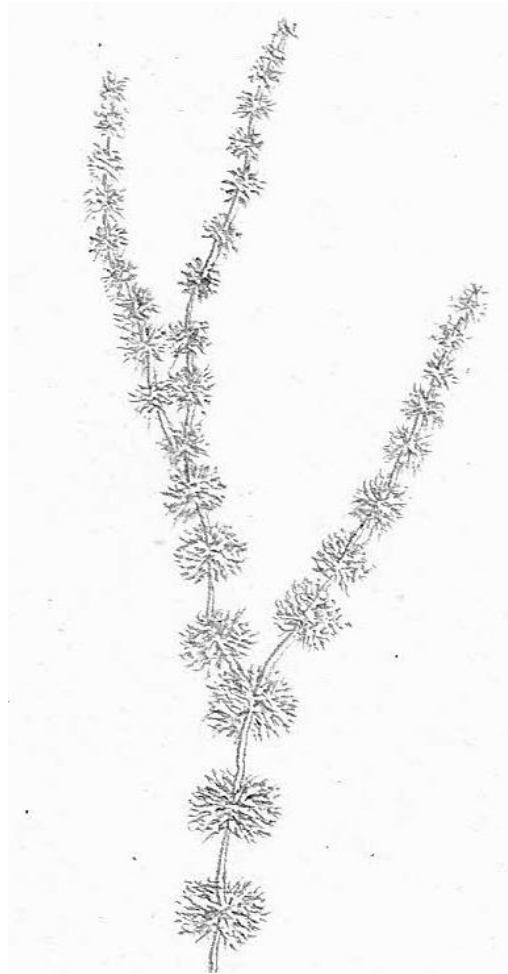


Sexual reproduction in *Chara* is carried out by the formation of male and female reproductive structures such as globules and nucules respectively. Globules are terminal and nucules are laterals. These structures are produced at one of few basal nodes of primary lateral.

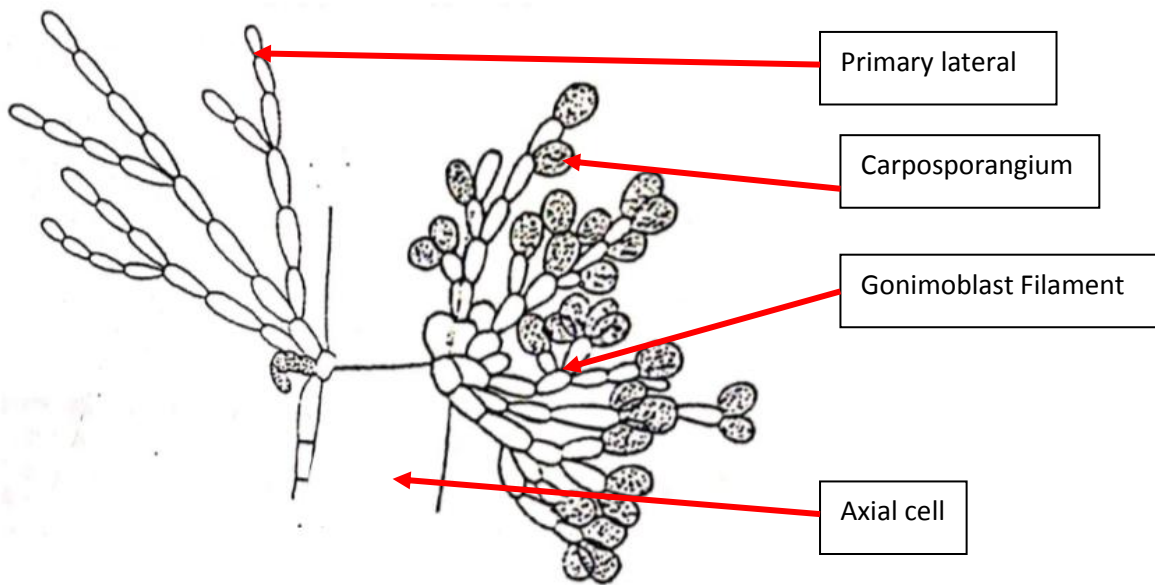
Antheridium: Antheridium or globule is a spherical structure externally surrounded by four or eight shield cells. The inner layers of shield cells are ruminant as they are provided with infoldings. From the centre of each of the shield cell arises a radially elongated manubrium. On the distal region of the manubrium occurs a primary capitular cell which undergoes successive longitudinal divisions to form capitular cells. Each of these secondary capitular cells undergoes transverse division to form antheridial filaments. Antheridial filaments contain discoid cells called antheridia. Each of these antheridia metamorphoses into an antherozoid. The mature antherozoid is spirally coiled with two sub-apically inserted flagella. The body of the antherozoids and flagella are covered with scales.

Oogonium: Oogonium or nucule is ovate in shape. Oogonia are produced from the peripheral cell of the basal node of the antheridium. A mature oogonium is attached to the basal node of the antheridium by a stalk cell. It contains a basal node and the five peripheral cells of the basal node undergo two successive transverse divisions to form basal tube cells and coronary cells. The five tube cells grow spirally over the egg which brings the coronary cells to the distal region of the nucules. The mature egg produces lot of mucilage which exudates through the space created by pushing a part of the coronary cells.

***Batrachospermum* Sp.**



Habit



Nodal region enlarged to show Carposporphyte

***Batrachospermum* –Carposporophyte**

The photograph kept is the carposporophyte of *Batrachospermum*. It is formed by the fertilized *carpogonium*. The diploid nucleus undergoes mitotic division to form numerous nuclei which are incorporated into small protrusions formed all over the fertilized carpogonium. When a cross wall formed at the base of each of these protrusions they become gonimoblast initials. These develop into small filaments of few cells in height called gonimoblast filaments. The distal cell of these filaments are enlarged with dense content and called as carposporangia. The content of the carposporangia are liberated as carpospores. Hence the fertilized carposporangium, gonimoblast filaments and carposporangia all together constitute carposporophyte of *Batrachospermum*. This represents one of the three phases in the life cycle of *Batrachospermum* and it is considered to be growing on the gametophytes as a parasite.